

# FEDEROWICZ, Wladyslaw, mgr., ins. Methods of combating accidents in servicing electric installations in Poland. Wiad elektrotech 28 no.11/12:330-334 N-D '61.

1. Przewodniczacy Centralnej Komisji Ochrony Pracy, Stowarzyszenie Elektrykow Polskich, Warszawa.

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000412610003-4"

FEDEROWICZ, Wladyslaw, mgr.,inz.

Modern methods for industrial safety at electric installations. Wiad elektrot 30 no.3:70-73 '62.

1. Przewodniczacy Centralnej Komisji Technicznej Ochrony Pracy Stowarzyszenia Elektrykow Polskich.

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federowski, w.	
"Wages for work connected with the reconstruction of agricultural system (Przeglad Geodezyjny, Vol 9, No 2, Feb 1953, Warszawa)	. <sup>n</sup> p. 47
2 9 SO: Monthly List of East European Accessions, Vol E, No E, Library of Co	Sept 53 ongress XXMXXX Uncl

FELEROWSKI, W., Supplementary surveying of state farms. p. 181.

Vol. 11, no. 6, June 1955, Warszawa, Poland. SCIENCE

SO: Monthly List of East European Accessions (EEAL), LC, Vol. 5, No.2 Feb. 1956

. USSR/Human and Animal Physiology - (Normal and Pathological).

Nervous System. Electroencephalogram of Man.

 $\mathbf{T}$ 

Abs Jour

: Ref Zhur Biol., No 4, 1959, 17922

Author

: Peymer, N.A., Fedeyeva, A.A.

Inst

Military-Medical Academy

itle

Changes of Electroencephalogram in the Process of Conditioned-Reflectory Activity in Patients with Closed

ditioned-Reflectory Acti Trauma of the Brain.

Orig Pub

: Tr. Voyen-med. akad., 1957, 74, 286-293

Abstract

: In comparison with healthy people, patients with traumatic encephalopathy had a reaction to an indifferent stimulus that was more prolonged (10 sec) and stable (extinguishes by 8-10 test). The transformation of the stimulus into a conditioned stimulus induced the same changes as well as the appearance of high-amplitude slow waves

Card 1/2

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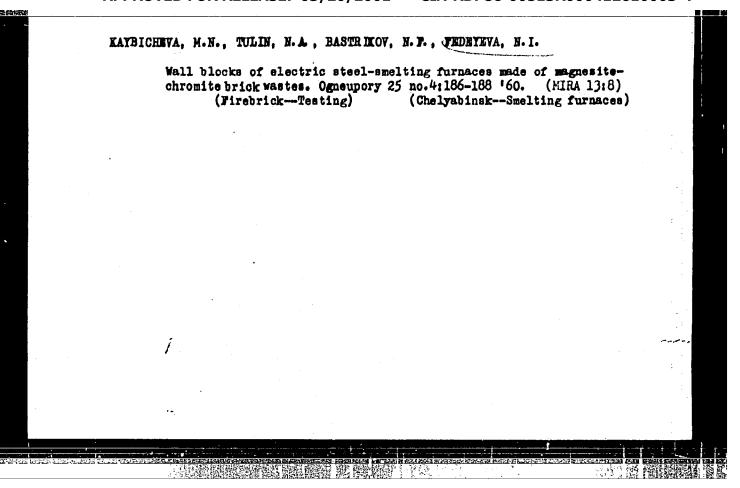
USSR/Human and Animal Physiology - (Normal and Pathological).

Nervous System. Electroencephalogram of Man.

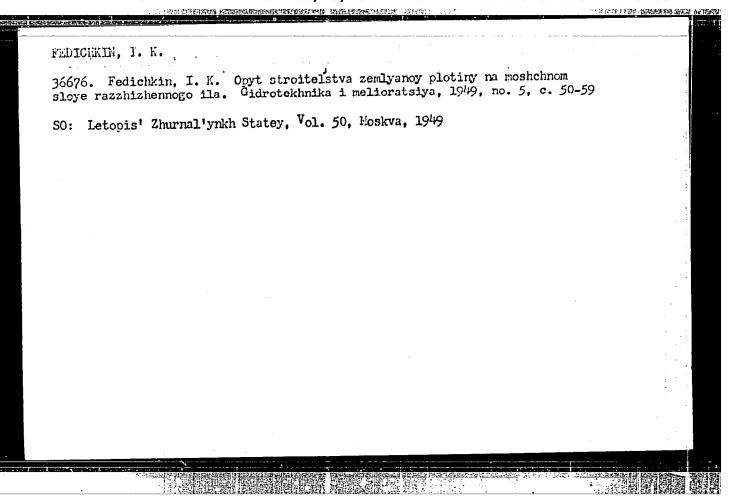
Abs Jour : Ref Zhur Biol., No 4, 1959, 17922

二年。由为在田川部公司共和山市 华大州市

and "ejections", especially strongly expressed in differentiated stimuli. To these changes corresponded a large latent period and prolonged character of motor reaction, intersignal reaction and a frequently encountered inability to produce differentiation. -- T.G. Beteleva



# FEDICHKIN. 9. Ya Methods of growing hemp and ambary in the zone of light Sierozens of the Chu Valley. Trudy Otd.pochv.AN Kir.SSR no.5:63-71 '55. (Chu Valley--Sierozem soils) (Hemp) (Ambary hemp) (Chu Valley--Sierozem soils) (Hemp) (Ambary hemp)



FEDICHKIN, I.K., prof.; OVCHARENKO, I.KH., inzh.; AVTONOMOV, B.P., inzh.; KONOCHKIN, F.G., inzh.

Features of water intake from a river during the low-water period by port-type water intakes. Izv. vys. ucheb. zav.; energ. 6 no.6:111-114 Je '63. (MIRA 16:11)

1. Novocherkasskiy inzhenerno-meliorativnyy inutitut. Predstavlena nauchno-tekhnicheskoy konferentsiyey.

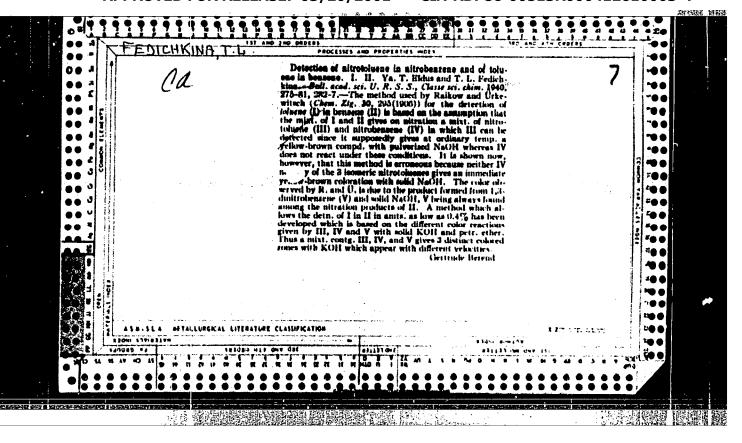
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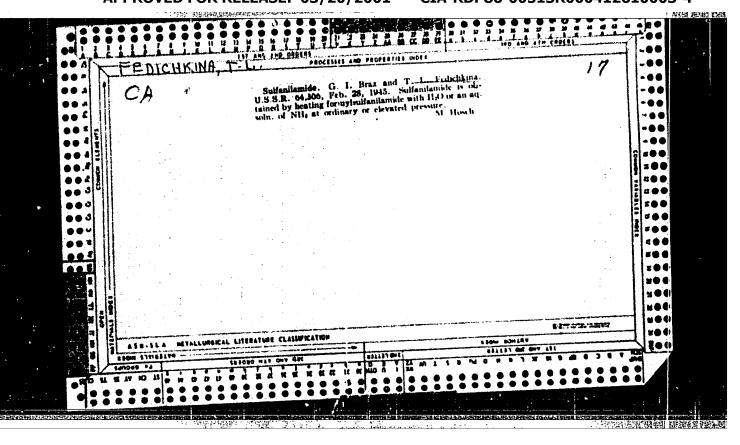
FEDICHKIN, N., red.; GOLIN, A., tekhn. red.

[Use polymers in production; collection of materials of the Scientific and Technological Conference on the Use of Polymers in Industry held in Penza] Polimery - v proizvod-stve; sbornik materialov. Penza, Sovet. nar. khcz. Penzenskogo ekon. administrativnogo raiona, 1962. 110 p.

(MIRA 17:3)

1. Nauchno-tekhnicheskaya konferentsiya po voprosu primeneniya polimerov v promyshlennosti, Penza.





27-8-12/32 USSR/Agricultural Schooling SUBJECT: Director of Agricultural Mechanization Deputy Fedik. A., AUTHOR: School # 4, (Vinnitsa Oblast) Large Training Farms are Required (Nuzhny Krupnyye Uchebnyye TITLE: Khozyaystva) Professional'no - Tekhnicheskoye Obrazovaniye, Aug 1957, #8 PERIODICAL: pp 19-20 (USSR) The article deals with questions of training students in agri-ABSTRACT: cultural mechanization schools and supports the assignment of larger training farms, the size depending on the number of students and the kind of soil. INSTITUTION: Uchilishche Mekhanizatsiyi Sel'skogo Khozyaystva # 4 (Vinnitskaya Oblast') (Agricultural Mechanization School #4 (Vinnitsa Province). PRESENTED BY: SUBMITTED: At the Library of Congress AVAILABLE: Card 1/1

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000412610003-4"

一大型大型工作的重要的工程 医原门多兰

16.7300

S/258/62/002/002/009/018

1028/1228

**AUTHOR:** 

Fedik, I. L. (Moscow)

TITLE:

Tension of discs of a plastically non-uniform material

PERIODICAL:

Inzhenernyy zhurnal, v. 2, no. 2, 1962, 324-331

TEXT: A disc of a material having a yield-point which is a function of the distance from the surface is considered. As plasticity condition is taken St-Venant's condition. The equilibrium equation for discs of variable thickness and the equation of consistency of deformations are determined. The set of equations is then integrated for discs of uniform and variable thickness: the cases of elastic, plastic-elastic, and plastic zones are treated separately. The load  $P_{\text{max}}$  at which elastic deformations disappear completely can be determined from the equations obtained. Tables of  $P_{\text{max}}$  for both fixed and variable yield-point are given. There are 2 figures and 2 tables.

ASSOCIATION: Institut mekhaniki AN SSSR (Institute of Mechanics AS USSR)

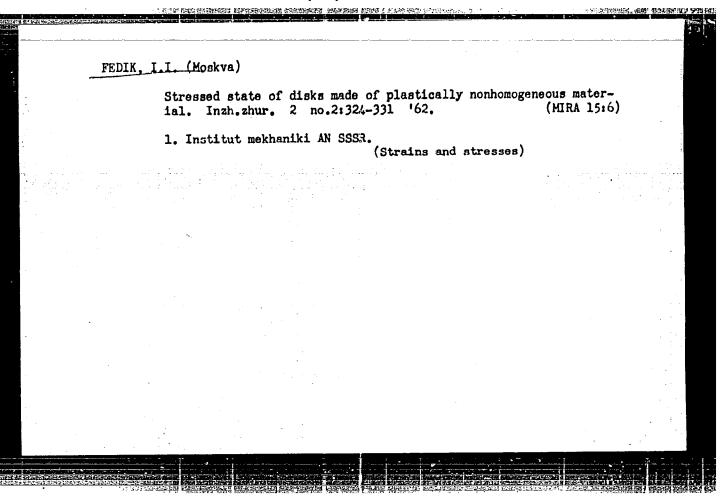
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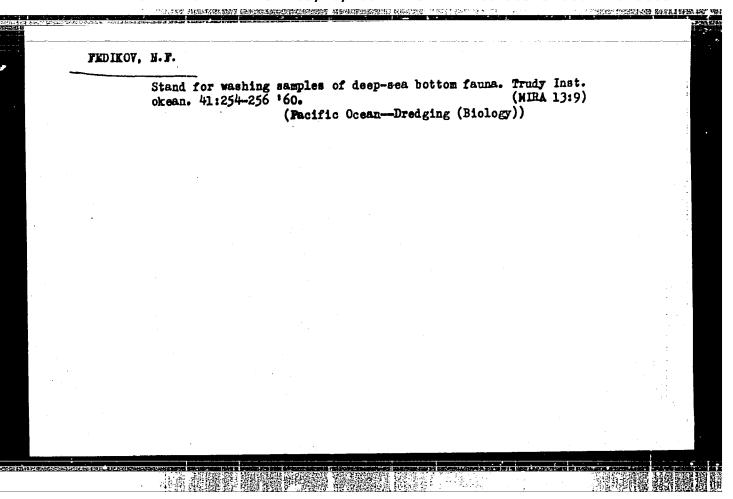
November 28, 1961

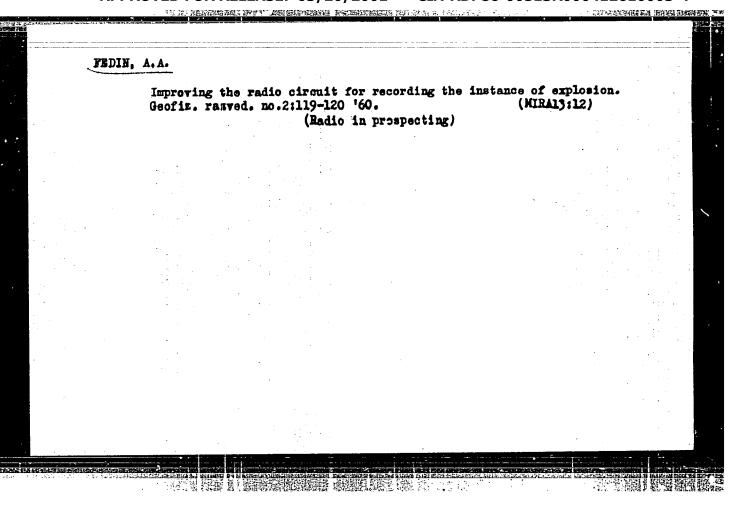
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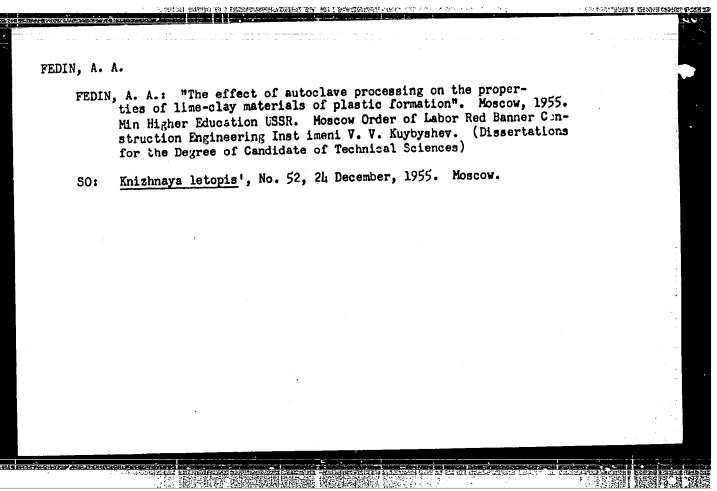
	8/879/62/000 D234/D308	0/000/012/088
AUTHOR:	Fedik, I. I. (Mosoow)	
TITLE:	Momentless orthotropic shells of revoluto large deformations	ution subject
SOURCE:	Teoriya plastin i obolochek; trudy II rentsii, L'vov, 15-21 sentyabrya 1961 AN USSR, 1962, 111-114	Vsesoyuznoy konfe- g. Kiev, Izd-vo
TEXT:	The author formulates the equations of equil	ibrium
	$\frac{dS}{dx} = \frac{\cos \varphi}{\cos \varphi} \cdot h^{m} \left(\frac{\zeta}{\zeta}\right)^{n} ;$	
	$\frac{dh}{dx} = -\frac{h}{x} \frac{a \ln \frac{x}{\xi} + b \ln h + c \left(1 - \frac{x}{\xi} \frac{d\xi}{dx}\right)}{1 + c \ln \frac{x}{\xi} + \ln h}$	<b>;</b>
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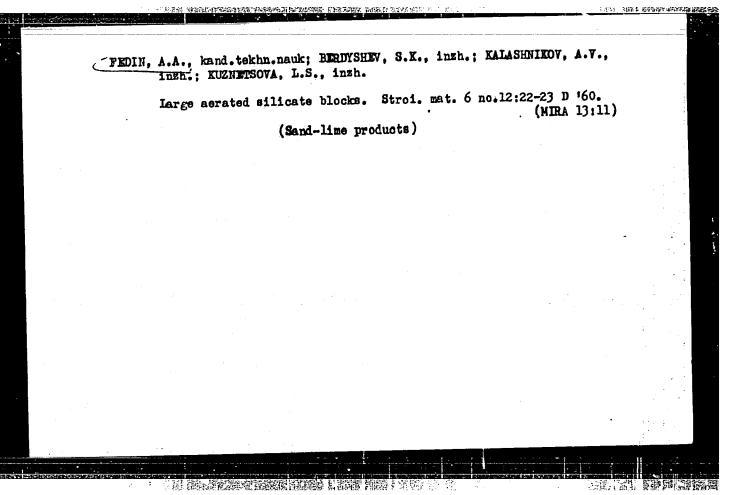
Momentless	S/879/62/000/000/012/088 orthotropic D234/D308	
and applie with rigid	$\cos \varphi = \sqrt{1 - \left[\frac{Mx}{h \ln h + c \ln \frac{x}{\xi}}\right]^2} $ b, c are expressions in terms of Poisson's coefficients) a them to a spherical shell and to a cylindrical shell end plates. Some special cases are discussed, in par-	
ticular th	e initial form of a shell which becomes spherical when pressure. There are 2 figures.	
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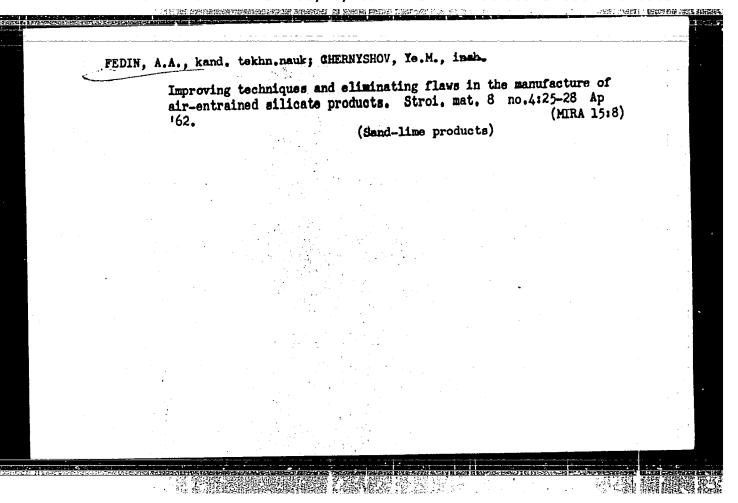












VLASYUK, P.A., akademik, red.; ROMANENKO, I.N., akademik, red.; RODIONOV, S.P., red.; TYULENEV, red.; PSHENICHNYY, P.D., akademik, red.; DAYYDOV, kand.ekon.nauk, red.; KUGUKAIO, I.A., kand.ekon.nauk; BEREZIKOV, V.S., red.; FEDIH. A.D., red.; KOZAKEVICH, T.A., red. izd-va; SIVACHENKO, Ye.K., tekhn.red.

[Proceedings of the Conference on Problems in Developing Production in Polesye] Konferentsiia po voprosam rasvitiia proisvoditel nykh sil Poles'ia USSR. Kiev, 1955. Pt.3 [Problems in the development of agriculture in Polesye; stockbreeding and feed supply, land improvement and reclamation of swamps] Voprosy rasvitiia sel'skogo khoziaistva Poles'ia; zhivotnovodstvo i kormovaia baza, melioratsiia i osvoenie bolot. Kiev, Izd-vo Akad. nauk USSR. 1958. 208 p. (MIRA 12:1)

1. AN USSR; Ukrainskaya akademiya sel'skokhoz.nauk i Vsesoyuznaya akademiya sel'skokhoz.nauk im. V.I. Lenina (for Vlasyuk). 2. Ukrainskaya akademiya sel'skokhoz.nauk, chlen-korrespondent Vsesoyuznoy akademii sel'skokhoz. nauk im. V.I. Lenina (for Romanenko). 3. Chlen-korrespondent AN USSR (for Rodionov, Tyulenev). 4. Institut fisiologii rasteniy i agrokhimii AN USSR (for Tyulenev). 5. Ukrainskaya akademiya sel'skokh. nauk (for Pshenichnyy). 6. Zamestitel' machal'nika otdela svodnykh perspektivnykh planov Gosplana USSR (for Berezikov): 7. Nachal'nik podotdela sel'skogo khozyaystva otdela svodnykh perspektivnykh planov Gosplana USSR (for Fedin). (Polesye--Agriculture)

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LUK'YANOV, V.B.; MAKAROV, A.V.; FEDIN, A.D.

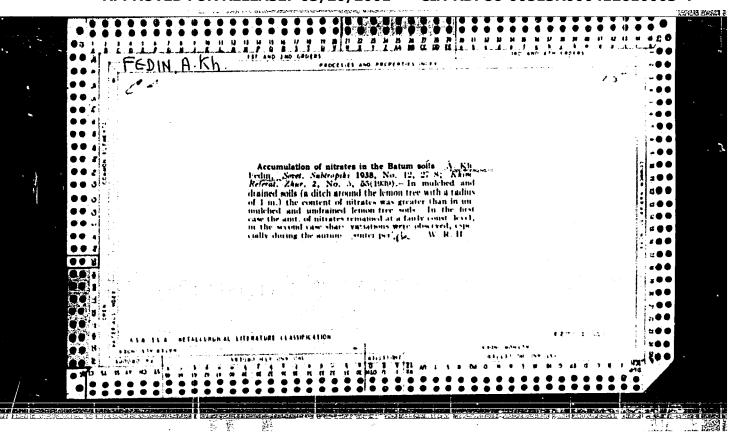
Mathematical statistics in the control of radiometric apparatus.
Zav.lab. 29 no.7:844-849 '63. (MIRA 16:8)

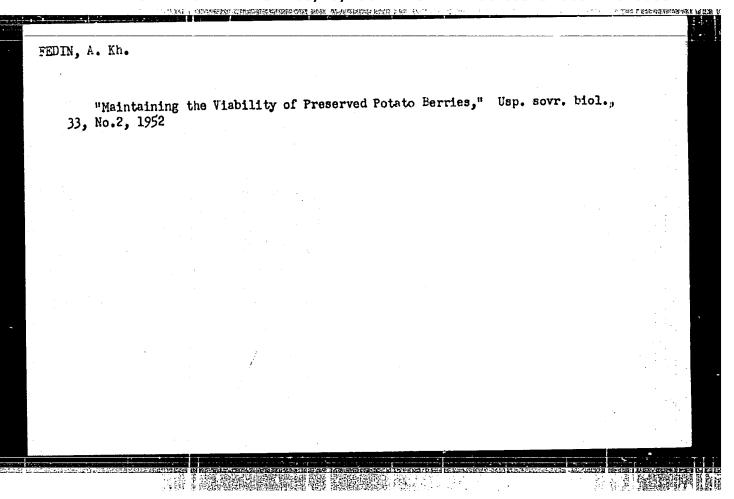
1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Radiometry) (Mathematical statistics)

SEGEYEV, N.N.; IVANOV, K.V.; FEDIN, A.F.; KRASOVSKIY, Yu.P.; TKACHENKO, A.P.

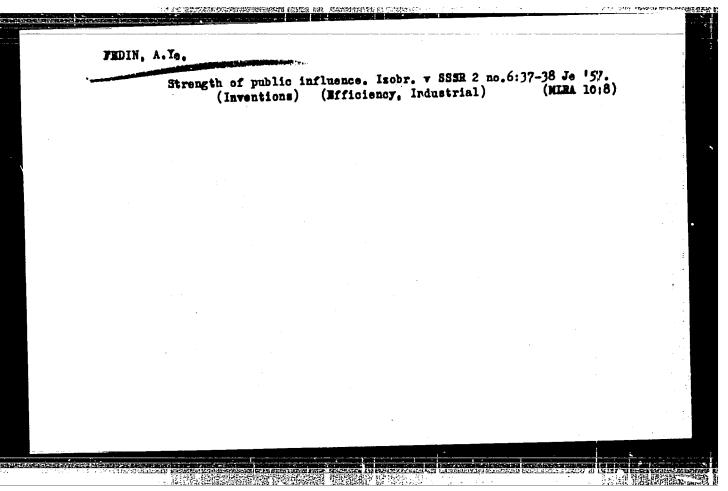
Rapid building of the Pervomayskiy open-pit mine in the Severnoys
Mining and Ore Dressing Combine. Met. 1 gornorud. prom. no.3:73-74
My-Je '63.

(MIRA 17:1)





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"A New Genus of Fossil Conifers Papaninia Involucrata Fedin,"	1		
Dokl. Ak. Nauk SSSR, 41, No. 8, 1943 .			
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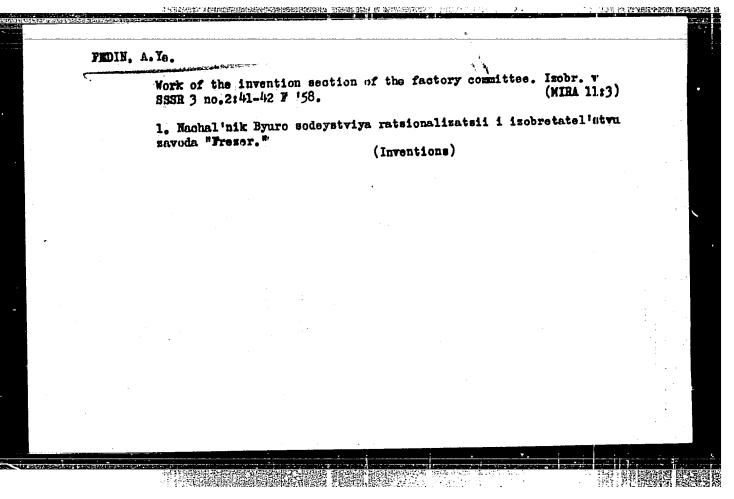


FEDIN, A.Te.

Visiting innovators. Izobr.v SSSR 3 no.1:34-35 Ja '58. (MIRA 11:1)

1. Nachal'nik Byuro sodeystviya ratsionalizatsii i izobretatel'stva Moskovskogo zavoda "Freser."

(Inventors)



SOV/117-58-11-6/36

A UTHORS:

Braginskiy, Ye.O., Engineer, Fedin, A.Ye. 1000

TITLE:

The Modernization of the Semi-Automatic Milling Machine Model

6V-1 (Modernizatsiya frezernogo poluavtomata modeli 6V-1)

PERIODICAL:

Mashinostroitel', 1958, Nr 11, p 8 (USSR)

ABSTRACT:

The semi-automatic milling machine model 6B-1 is used for milling screw grooves. In the regulation of the spindle, there were several drawbacks. The modernized spindle has been mounted on rolling bearings. The longitudinal stresses are absorbed by support bearings. In the front support of the spindle, a two-range roller bearing AZ182116 has been inserted which ensures the rigidity of the spindle and the exactness of the revolutions. The clearances between bear-

ings have been abolished. There is I diagram.

1. Milling machines--Performance 2. Milling machines--Design

Card 1/1

**APPROVED FOR RELEASE: 03/20/2001** CIA-RDP86-00513R000412610003-4"

STROYEV, A. S., BUDZINSKIY, O. Z., IVANOV, A. M. and FEDIN, B. V. Institute of Aircraft Materials.

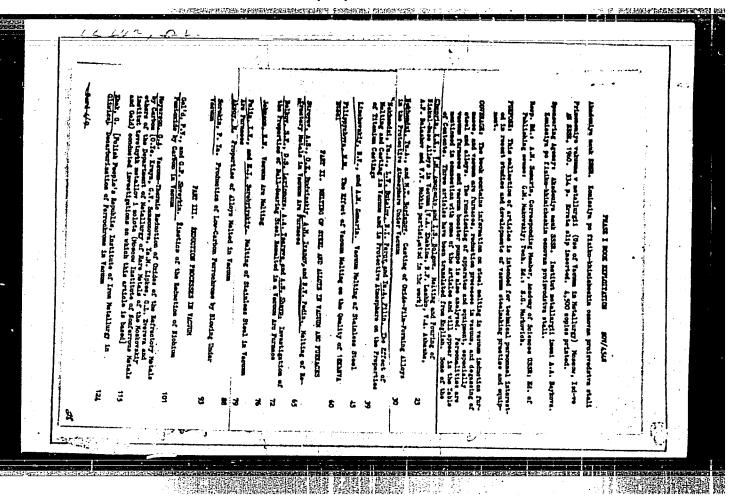
FEDIN, B. V.

"Vacuum Arc Melting of Refractory Metals."

paper presented at Second Symposium on the Application of Vacuum in Metallurgy.

Moscow, 1-6 July 1958

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ZAKHAROVA, Galina Vasil'yevna, kand. tekhm. nauk; POPOV, Ivan Alekseyevich, kand. tekhn. nauk; ZHOROVA, Liliana Pavlovna; FEDIN, Boris Vladimirovich; Prinimali uchastiye: MUKHINA, Z.S., zasl. deyatel' nauki i tekhm. RSFSR; POPOVA, I.A., zasl. deyatel' nauki i tekhn. RSFSR; YEGOROVA, N.D., zasl. deyatel' nauki i tekhm.RSFSR; NIFITINA, Ye.I., zasl. deyatel' nauki i tekhn. RSFSR; ZHEMCHUZRNAYA, Ye.A., zasl. deyatel' nauki i tekhn. RSFSR; ZHABINA, V.A.; SAVITSKIY, Ye.M., red.; STROYEV, A.S., red.; ARKHANGEL'SKAYA, M.S., red. izd-va; KARASEV, A.I., tekhn. red.

2.5. 10.1. 10.1. 10.1. 10.1. 10.1. 10.1. 10.1. 10.1. 10.1. 10.1. 10.1. 10.1. 10.1. 10.1. 10.1. 10.1. 10.1. 10.1

[Niobium and its alloys] Niobii i ego splavy. By G.V.Zakharova i dr. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tavet-noi metallurgii, 1961. 368 p. (MIRA 14:12)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000412610003-4"

FEDIN, B.V.

PHASE I BOOK EXPLOITATION

sov/5934

Zakharova, Galina Vasil'yevna, Ivan Alekseyevich Popov, Liliana Pavlovna Zhorova, and Boris Vladimirovich Fedin

Niobiy i yego splavy (Niobium and Its Alloys) Moscow, Metallurgizdat, 1961. 368 p. Errata slip inserted. 3700 copies printed.

Eds.: Ye. M. Savitskiy and A. S. Stroyev; Ed. of Publishing House: M. S. Arkhangel'skaya; Tech. Ed.: A. I. Karasev.

PURPOSE: This book is intended for scientific research workers, metallurgical enginee... and designers concerned with the production or utilization of niobium. It may also be useful to students at metallurgical schools of higher education.

COVERACE: The book reviews the physicochemical and mechanical properties of niobium and niobium alloys, methods of obtaining niobium in powder and consolidated form, the effect of gases on the properties of niobium, the process of niobium oxidation in air, the machining and heat treatment of niobium and its deformation, welding, metallography, and fields of application.

Card 1/

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### Niobium and Its Alloys

# SOV/5934

A large volume of material relating to equilibrium diagrams and the properties of niobium alloys is systematized. Chs. I, II, Section 1 of Ch. III, and Chs. IV, and X were written by G.V. Zakharova, Candidate of Technical Sciences; Ch. III, by B. V. Fedin; Ch. VI and VII, by I.A. Popov and L.P. Zhorova, Candidate of Technical Sciences; Ch. VIII, by L.P. Zhorova; Section 1 of Ch. IX, by G.V. Zakharova; Section 2 of Ch. IX, by Z.S. Mukhina, I.A. Popova, N.D. Yegorova, Ye. I. Nikitina, and Ye. A. Zhemchuzhina; and Section 3 of Ch. IX, by V.A. Zhabina. Each chapter is accompanied by references, Soviet and non-Soviet.

### TABLE OF CONTENTS:

Ch. I. Niobium Minerals and Their Sources 1. Characteristics of niobium minerals 2. Raw-material sources	9 9 10
Ch. II. Production of Niobium Powder and the Processing of Ore Concentrates  1. Beneficiation of niobium ores  2. Separation of titanium, tantalum, and niobium  3. Extraction of powderlike niobium metal	13 13 16 19

Card 2/8

ZHOROVA, Liliana Pavlovna; KURGANOV, Georgiy Vladimirovich;
FEDIN, Boris Vladimirovich; FISHER, A.Ya., red.;
RNYUKHACHEVA, V.V., ved. red.

[Modern nicoium alloys, the technology of their production and use; review of foreign techniques] Sovrementye nicobievye splavy, tekhnologiia ikh proizvodstva i primenenie; obzor zarubezhnoi tekhniki. Moskva, GOSINTI, 1962. 27 p.

(MIRA 17:5)

SOV/30-58-7-14/49 Fedin, E. I. AUTHOR: A Quadrupole Radiospectroscope (Kvadrupol'nyy radiospektroskop) Vestnik Akademii nauk SSSR, 1958, Ar 7, pp. 79 - 81 (USSR) TITLE: PERIODICAL: In 1950, the German scientists G.Demelt, G.Krüger (G.Kryuger) discovered the phenomenon of nuclear quadrupole resonance. The ABSTRACT: frequency of the quadrupole resonance is sensitive with respect to changes of the chemical properties of the atoms to be investigated and extremely sensitive with respect to insignificant modifications of the crystal lattice. The quadrupole resonance amongst all physical must be considered as the most sensitive methods of investigation with respect to chemical properties. The character of the chemical compound may be concluded from the intensity of the absorption line. In the Soviet Union no work has hitherto been carried out in this field. Recently, the Scientific Council of the Instituteof Elemental-organic compounds, AS USSR (Uchenyy sovet Instituta elementoorganicheskikh soyedineniy Akademii nauk SSSR) decided to start the investigations in this field. The author of this article - in collaboration with Card 1/3

A Quadrupole Radiospectroscope

SOV/30-58-7-14/49

G.K. Semin - investigated a series of the schemes in the Laboratory of Organic Chemistry of Crystals and X-Ray Structural Analysis (Laboratoriya organicheskoy kristalischimii i rentgenostrukturnogo analiza) which is under the supervision of A.I. Kitaygorodskiy. A signal of nuclear quadrupole resonance was obtained in the USSR for the first time in summer 1957. After this success, the author - in collaboration with Yu.S. Konstantinov began to design a quadrupole radiospectroscope. The block scheme of this device is given. in figure 1 and explained. The method of recording absorption lines of CD in sodium chlorate at room temperature is shown infigure 2. Taking account of the sensitiveness of the quadrupole resonance for any structural changes, it will most probably be possible to apply. This method to the control of chemical processes. As a conclusion, the author finds that the time has come to coordinate the work carried out in this field, whereby development would be accelerated. There are 2 figures.

Card 2/3

AUTHOR:

Felin, E. I.

507/53-66-1-7/11

TITLE:

Physical Methods of the Investigation of Molecule Structure (Fizicheskiye metody issledovaniya stroyeniya molekul)

PERIODICAL:

Uspekhi fizicheskikh nauk, 1958, Vol. 66, Nr 1,

pp. 131 - 139 (USSR)

ABSTRACT:

On May 14 and 15, 1958 at the Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AS USSR) an extended session of the Scientific Council took place dealing with the subject: "Theory of Chemical Structure, Kinetics, and Reactivity". The session was summoned by the Otdeleniye khimicheskikh nauk AN SSSR (Department of Chemical Sciences, AS USSR). It was attended by more than 300 scientists. V.N. Kondrat'yev, Member, Academy of Sciences, USSR, gave the opening address. The following lectures were heard: A.I. Kitaygorodskiy, Professor, speke on radiographical, electronographical, and neutronographical methods for the determination of the molecule structure. B.S. Neporent reported on electron spectroscopical methods of investigating simple and complicated molecules. E. V. Shpol'skiy made a report on the spectroscopical investigation of polyatomic organic

Card 1/4

Physical Methods of the Investigation of Molecule Structure

sov/53-66-1-7/11

molecules and M.M. Sushchinskiy on "Methods of Oscillation Spectroscopy" (historical review: Since the discovery of combination scattering 30 years ago spectra of combination scattering of more than 2000 substances have been investigated and since the discovery of infrared spectroscopy 50 years ago more than 20 000 substances have been examined by means of the infrared spectra). V.I.Dianov-Klokov reported on infrared spectra of condensed gases: An animated discussion followed the first 5 lectures. M.A.Yel'yashevich, the comrades Makarov, Zamkov and Levin, further E.V. Shpol'skiy, N.D. Sokolov, B.S. Neporent, Ya.L.Gol'dfarb and G.L.Slonimskiy participated in this discussion. A.A. Brandt held the following lecture on electrical methods of the investigation of structure, properties, and interaction of the molecules, and comrade Ivanov made a suggestion on a device for the measurement of electrical characteristics in a wide frequency and temperature range. The session on May 15 was opened by A.M. Prokhorov with a lecture on radiospectroscopy and paramagnetic electron resonance (investigation of gases at

Card 2/4

Physical Methods of the Investigation of Molecule Structure

507/53-66-1-7/11

10-12 torr). Further L.A. Blyumenfel'd made an account of the application of the paramagnetic electron resonance in biology and in investigations of organic metal compounds (investigations in the laboratory of V.V. Voyevodskiy at the IKhF AN SSSR (Institut khimicheskoy fiziki AN USSR -Institute of Chemical Physics, AS USSR) and in the laboratory of Blyumenfel'd). N.D.Sokolov spoke on the work of the research group Kazan' (Kazanskiy Gosudarstvennyy universitet i Kazanskiy filial AN SSSR - Kazan' State University and Kazan' Branch, AS USSR). B.M.Kozyrev reported on the work performed by the staff of the Laboratory of Paramagnetic Electron Resonance, Sokolov on the application of the nuclear magnetic resonance for chemical investigations of molecules; N.M. Lyevskaya spoke on the same subject. V.L.Tal'roze gave an account of radiospectroscopic devices, E.I. Fedin reviewed new methods to investigate the molecular and the crystalline structure of solids (investigations in the laboratory of Kitaygorodskiy (INEOS AN SSSR)), K.V. Yladimirskiy reported on investigations of the chemical displacements in hydrogen and fluorine as well

Card 3/4

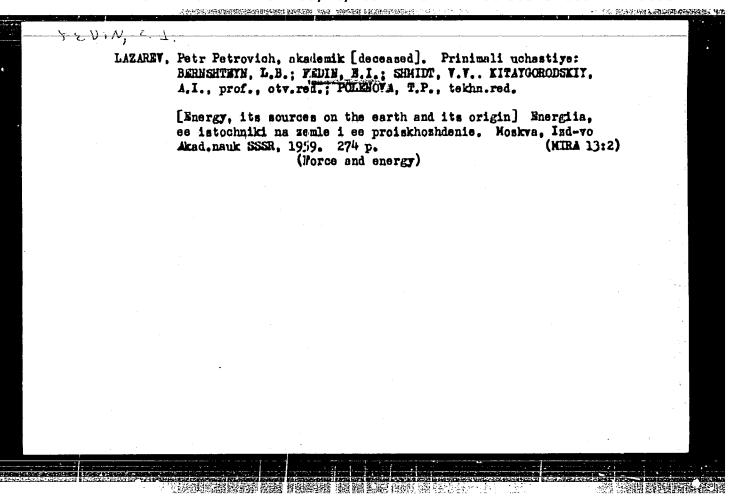
Physical Methods of the Investigation of Molecule Structure

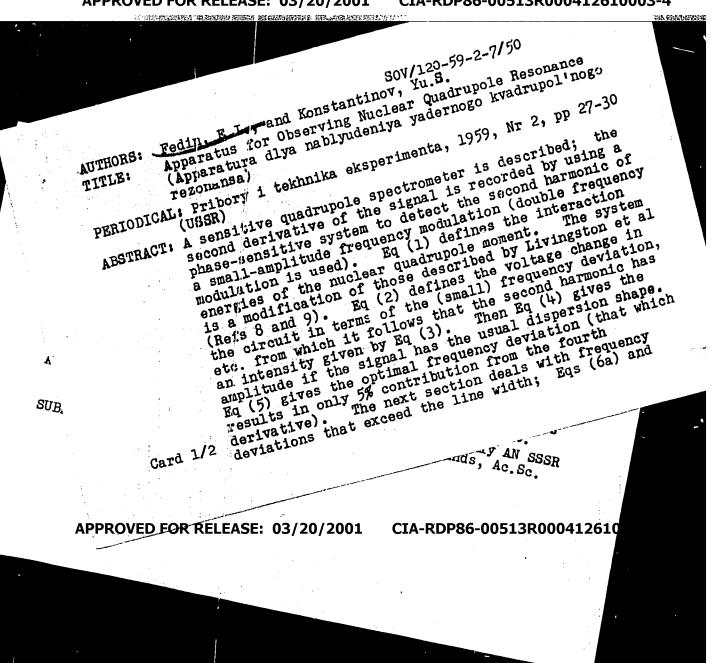
507/53-66-1-7/11

as in other nuclei which exhibit a magnetic moment. M A. Yel'yashevich reported on the development of spectroscopical methods, E.V. Shpol'skiy on the investigation of weak effects by means of methods basing upon the magnetic resonance, L.L. Dekabrun on "spin-echo" methods, Ya.G.Dorfman on magneto-chemistry, M.A.Yel'yashevich on the contact between various branches of research, and V.L.Tal'rox. on mass spectrometrical methods for the investigation of the molecule structure. Finally V.N.Kondrat'yev, Member, Academy of Sciences, gave the concluding address.

1. Molecules--Structural analysis 2. Laboratory equipment

Card 4/4





Sov/120-59-2-7/50

Apparatus for Observing Nuclear Quadrupole Resonance

(6b) then give the output. This method gives better sensitivity in detecting the line, but cannot give the line width. The circuit is that of Ref 10 (Hopkins') modified to suit Soviet valves. Fig 5 shows the signals recorded from the 35 Cl in 3 cc of polycrystalline sodium perchlorate at 29.9 Mc/s with scan amplitudes respectively smaller (left) and larger (right) than the line width.

Card 2/2 There are 5 figures and 12 references, of which 1 is German, 1 French, 7 are English and 3 are Soviet.

ASSOCIATION: Institut elementoorganicheskikh sovedineniy AN SSSR (Institute of Elemental-organic Compounds, Ac.Sc. USSR)

SUBMITTED: July 12, 1958

AUTHORS: Fedin, E. I. and Semin, G.K.

SCV/109-4-1-17/30

TITIE:

A Nuclear Quadrupole Radio-spectrometer (Yadernyy kvadrupol'nyy radiospektrometr)

PERIODICAL:

Radiotekhnika i Elektronika, 1959, Vol 4, Nr 1,

pp 127 - 128 (USSR)

ABSTRACT:

The authors tried to devise an equipment for determining the quadrupole resonance, such that it could be constructed by using the standard available elements. It was finally found that satisfactory results could be obtained by employing a quadrupole radio-spectrometer of the type shown in the block schematic of Figure 1. this, the investigated substance was situated in a brass container at the end or a coaxial line. The container housed the coil of the oscillator tank; a Hopkins-type oscillator-detector (Refs 1 and 2) was employed as the source of the radio-frequency energy and the detector of the nuclear signal. The variable capacitors of the tank circuit were such as to permit the coverage of a range from 25 to 37 Mc/s, while using the same coil. The and circuit was supplied from a battery, while the heater was fed from an accumulator. In order to obtain an oscillo-

Card1/3

sov/109-4-1-17/30

A Nuclear Quadrupole Radio-spectrometer

graphic display of the signal, the frequency of the tank circuit was varied by means of an electrodynamic vibrating; capacitor (type RV-1); this type of modulator resulted in a high resolving power of the spectrometer; this was of the order of 10-6, which was better than the minimum required in the experiment. The equipment was used for many months and proved successful in operation. An oscillogram of the signal and noise for the absorption line of C135 in sodium chlorate is shown in Figure 2.

line of C135 in sodium chlorate is shown in Figure 2. The work described in this paper represents only the first stage of the investigations which are being carried out under the leadership of Professor A.I. Kitaygorodskiy in the Laboratory of X-ray Analysis of the INECS of the Soviet Academy of Sciences. There are 2 figures and 2 English references.

Card 2/3

A Nuclear Quadrupole Radio-spectrometer

SOV/109-4-1-17/30

ASSOCIATION:

Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Organic Elemental Compounds, AS USSR)

SUBMITTED:

May 26, 1958

Card 3/3

## "APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R000412610003-4

24(4)

SOV/25-59-11-14/38

AUTHORS:

Kitaygorodskiy, A.1., Professor, Doctor of Physico-Mathematical Sciences, Fedin, E.I., Scientific

Worker

TITLE:

New Spectroscopy

PERIODICAL: Nauka i zhizn' 1959, Nr 11, p 35 - 40 (USSR)

ABSTRACT:

The article deals with radiospectroscopy - a new field of science by which the finest properties of matter can be analyzed. The author describes spectral analysis, the energetic structure of molecules and why atomic spectra are mainly studied in ultra-violet and visible rays. He explains the difficulties arising when studying the spectra of complex molecules, stating that the atom itself has a rich optic spectrum which consists of several cozens of lines. On the spectrogram of the molecule, these spectra are superimposed one on the other, thus complicating the deciphering. Moreover, the spectral analysis in visible and ultraviolet rays is too rough an instrument for investi-

Card 1/5

SOV/25-59-11-14/38

New Spectroscopy

gating the closely arranged energetic levels of com\_ plex molecules. The author illustrates by an example the possibilities offered by infra-red spectroscopy which are also limited. For studying complex molecules containing not only fluorine, but also many elements which are widely used by modern chemistry, it is necessary to find new more closely-arranged energy The author writes about two resonances: 1) levels. the electronic paramagnetic resonance (EPR) and 2) the nuclear magnetic resonance (YaMR). The electronic paramagnetic resonance was discovered by the Soviet physicist Ye.K. Zavoyskiy in 1944, the nuclear magnetic resonance by two American physicists in 1946. The combined application of infrared spectroscopy and nuclear magnetic resonance make it possible to fully determine the structure of a molecule. The discovery of Ye.K. Zavoyskiy made it possible to at once notice even small concentrations of molecular particles, the so-called free radicals, which is very important for

Card 2/5

SOV/25-59-11-14/38

New Spectroscopy

many chemical reactions. The method EPR was successfully employed in the laboratory of the Corresponding Member of the AS USSR V.V. Voyevodskiy of the Institut khimicheskoy fiziki (Institute of Chemical Physics) for studying reactions caused by radioactive radiation. In 1950, the YaMR was followed by the appearance of the nuclear quadrupole resonance (YaKR). The main difficulty in the study of the quadrupole resonance is the separation of very weak signals from noises. At the Laboratory of Professor A.I. Kitaygorodskiy, the work is in progress to increase the sensitivity of quadrupole spectrometers. Much experimental material has already been collected which makes it possible to compare the characteristics of chemical combination of the nucleus of chloride in hundreds of different compounds. Equal work is being done with the nuclei of bromine, iodine, nitrogen, sulfur and antimony. It must be mentioned that these interesting data have been obtained without screening with

Card 3/5

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000412610003-4"

SOV/25-59-11-14/38

New Spectroscopy

a magnetic field, the stabilization of which creates so many difficulties in the YaMR (nuclear magnetic resonance). The second important property of the YaKR consists in the fact that its lines are narrow and legible only if the substance is in a solid state. The YaMR shows a reverse situation: its lines can be observed clearly and easily in fluids, but they expand and become dim in a solid state. A nuclear magnetic radiospectrometer of super-high efficiency as shown in a picture is used for the investigation of chemical shifts of the proton resonance and permits in many cases to determine exactly the structure of the compound within 10 - 15 minutes. The laboratory of roentgenostructural analysis of the Institute of Elemental Organic Compounds of the AS USSR under the heading of Professor A.I. Kitaygorodskiy has created

Card 4/5

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SOV/25-59-11-14/38

New Spectroscopy

a new scientific direction - the organic crystallochemistry. There are 1 photograph, 9 drawings and 1 drawing on the centerfold.

ASSOCIATION:Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute for Elemental-Organic Compounds of the AS USSR)

Card 5/5

S/058/61/000/010/055/100 A001/A101

AUTHOR:

Fedin, E.I.

TITLE

Observation of nuclear quadrupole resonance in chlorine isotopes

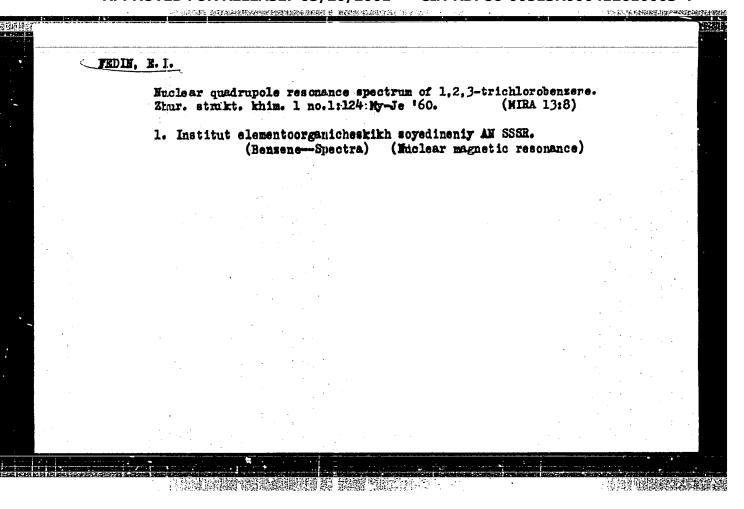
PERIODICAL: Referativnyy zhurnal.Fizika, no.10, 1961, 166, abstract 10V375 (V ab. "Paramagnith, rezonans", Kazan', Kazansk. un-t, 1960, 162-164)

TEXT: The author describes the work conducted by him in the laboratory of the Institute of Element-Organic Compounds, AS USSR, on constructing an installation for observations of nuclear quadrupole resonance in chlorine. The last version of the installation has a regenerative and a superregenerative sensors, Signals are registered by means of a synchronous detector. The second derivative of the signal is registered. A signal from 5 cm of polycrystalline para-dischlorobenzene can be recorded with such a signal-to-noise ratio which assures detection, at extended search, 125 times more than weak absorption.

N. Pomerantsev

[Abstracter's note: Complete translation]

Card 1/1



SPMIN, G.K.; FEDIN, F.I.

Applications of nuclear quadrupole resonance to crystallochemical investigations. Zhur. struk. khim, 1 no.2:252-267 JI-4g '60.

(MIRA 13:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

(Crystals—Spectra)

68605

5.4500(B)

8/020/60/130/05/014/061

AUTHORS:

Kitaygorodskiy, A. I., Fedin, E. I. B013/B014

TITLE:

Variation in the Intensity of Nuclear Quadrupole Resonance in

a Molecular Crystal Irradiated by Fast Electrons

•

Doklady Akademii nauk SSSR, 1960, Vol 130, Nr 5, pp 1005-1007

(USSR)

ABSTRACT:

PERIODICAL:

The author of the paper under review made use of nuclear quadrupole resonance for indicating radiation damages of polycrystalline samples of n-dichlorobenzene which were exposed to different doses of 750-kev electron radiation. Resonance was determined by means of a frequency-modulated quadrupole radiospectrometer with synchronous detection and signal recording by means of a recording millivoltmeter. The quadrupole resonance line was recorded several times for each sample (of Fig 2). These lines have a "saturation region" when the increase in the irradiation dose no longer influences the intensity of the quadrupole resonance signal. This region corresponds to an quadrupole resonance signal. This region corresponds to an quadrupole diminution of the signal intensity compared

Card 1/4

unexpectedly low diminution of the signal intensity compared to the signal intensity of the nonirradiated sample ( $A/A_0 = 0.75$ ). A considerable decrease of the signal ( $A/A_0 = 0.3$ ) was achieved

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000412610003-4"

68605

Variation in the Intensity of Nuclear Quadrupole S/020/60/130/05/014/061 Resonance in a Molecular Crystal Irradiated by B013/B014

Fast Electrons

for a sample which had been cooled insufficiently during irradiation. Thus, fusion centers developed. In this case, the quadrupole resonance frequency remained unchanged. This fact and earlier obtained results are easily explained by the assumption that the chemical transformation occurring under the action of γ- and β-radiation can proceed inversely only at the crystal sites where the packing density is lower than in a perfect lattice. At sites of normal packing the position of molecule fragments obtained by the disrupture of the chemical bond remains strictly fixed, and the bond is immediately restablished. After the relecules in the thin surface layer of the blocks, at the crack boundaries, etc have been destroyed, a further increase of the radiation dose has no effect on the intensity of the quadrupole resonance signal. When the sample is heated, A/A decreases because the number of insufficiently packed and completely free molecules increases the fusion centers.

Card 2/4

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68605

Variation in the Intensity of Nuclear Quadrupole S/020/60/130/05/014/061 Resonance in a Molecular Crystal Irradiated by B013/B014

 $(A_0-A)/A=X_1/N$  holds.  $N_1$  denotes the number of molecules at loosely packed sites, and N is the number of normally packed molecules. Reasonable values are obtained by estimating the block sizes (as, e.g., 4.104 molecules per block). Cavities, cracks, etc. are a little more than 4% of the crystal volume. This is in close agreement with data obtained from X-ray structural analyses. A carefully bred single-crystal sample with a fairly perfect lattice must have a considerably higher stability against ionizing  $\gamma$ - and  $\beta$ -radiation than has a polycrystalline sample. It is suggested to verify this problem by the same method. The authors thank B. L. Tsetlin, A. P. Bayev, and P. Ya. Glazunov for their assistance in the irradiation of samples. There are 2 figures and 4 references, 1 of which is Soviet.

ASSOCIATION: Institut elementorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds of the Academy of Sciences of the USSR)

Variation in the Intensity of Nuclear Quadrupole 8/020/60/130/05/014/061 Resonance in a Molecular Crystal Irradiated by B013/B014

PRESENTED: October 6, 1959, by I. V. Obreimov, Academician SUBMITTED: October 2, 1959

Card 4/4

# FEDIN, E. I.

Cand Phys-Math Sci - (diss) "Study of molecular crystals by the nuclear quadripole resonance method." Moscow, 1961. 12 pp; (Inst of Chemical Physics of the Academy of Sciences USSR); 200 copies; free; bibliography at end of text (15 entries); (KL, 5-61 sup, 174)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000412610003-4"

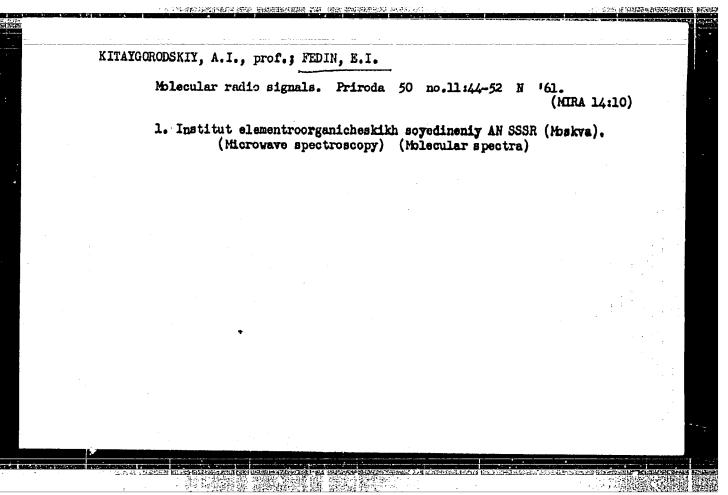
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# FEDIN, E.I.; KITAYGORODSKIY, A.I.

Investigation of solid solutions of certain organic compounds by the nuclear quadrupole resonance method. Kristallografiia 6 no. 3:406-412 My-Je '61. (MIRA 14:8)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Nuclear magnetic resonance and relaxation)
(Solid solutions) (Organic compounds)

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000412610003-4"

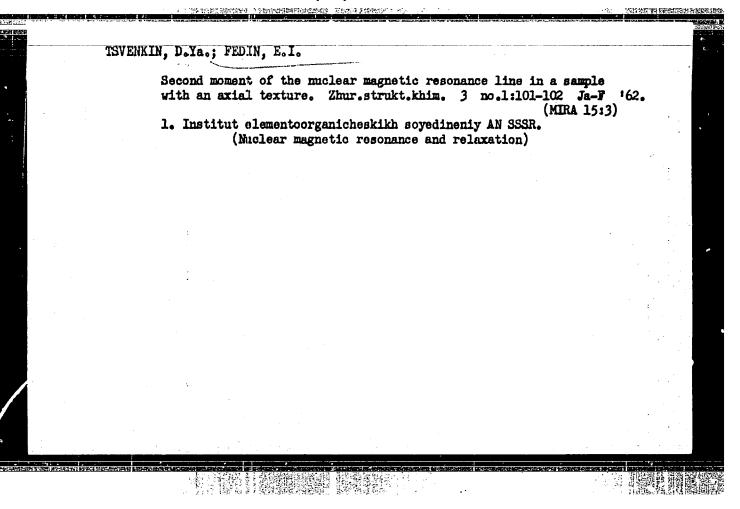


FEDIN, E.I., PETROVSKIY, P.V., REVENKO, O.M., YUR'YEV, Yu.K.

Nuclear magnetic resonance spectra of homologs of thiophane and pentamethylene sulfide. Neftekhimiia 2 no.3:270-274 My-Je
'62. (MIRA 15:8)

1. Institut elementoorganicheskikh soyedineniy AN SSSR i Moskovskiy gosudarstvennyy universitet.

(Thiophene—Spectra) (Thiopyran—Spectra)



39982

S/181/62/004/008/027/041 B108/B102

24.7000

AUTHORS: Waugh, J. S., and Fedin, E. I.

TITLE: Determination of the barriers of delayed rotation in solids

PERIODICAL: Fizika: tverdogo tela, v. 4, no. 8, 1962, 2233 - 2237

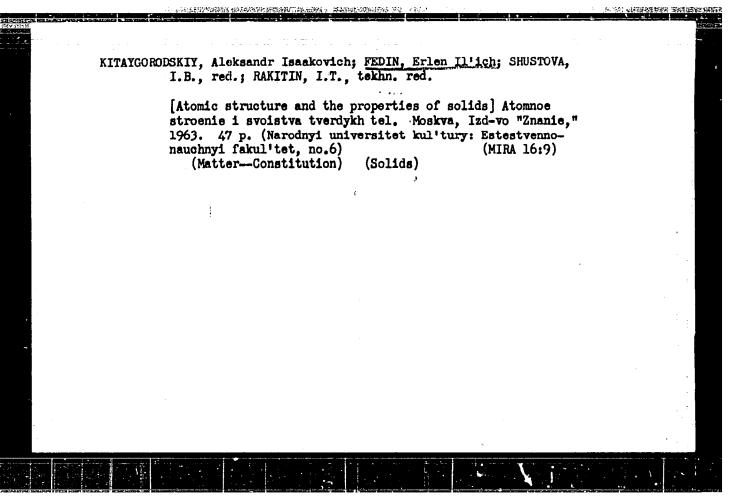
TEXT: The potential barrier  $V_0$  delaying the rotation (reorientation) of molecules or ions is calculated approximately. The frequency of reorientation is usually assumed as  $\omega_c = \omega_0 \exp(-V_0/kT_0)$ . The experimental part can be considerably reduced if the temperature dependence of the nuclear magnetic resonance line width is employed in the theory, for  $\omega_c \approx \Delta$  at  $T_c(\Delta - \text{"excess" line width})$ . Therefore,  $\Delta \approx n/\sqrt{2}\exp(-V_0/kT_c)$ , from which  $V_0$  can be determined. One has only to determine the temperature  $T_c$  at which the lines start to contract, and the amount by which the line width changes. The results obtained in this way agree well with those of other methods. In particular, the relation  $V_0(\text{kcal/mole}) \approx 37T_c(^0K)$  can Card 1/2

Determination of the barriers ... S/181/62/004/008/027/041
be used with an accuracy of about 10%. There is 1 table.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR Moskva (Institute of Elemental Organic Compounds AS USSR Moscow)

SUBMITTED: April 11, 1962

Card 2/2



LYUBIMOV, A.N.; VARENIK, A.F.; FEDIN, E.I.

Nuclear magnetic resonance spectrometer of high resolution of the central automation laboratory. Zhur.strukt.khim. 4 no.6: 919-923 N-D '63. (MIRA 17:4)

1. TSentral'naya laboratoriya avtomatiki, Institut elementoorganicheskikh soyedineniy AN SSSR.

NESMEYANOV, A.N., skademik; KOCHETKOVA, N.S.; PETROVSKIY, P.V.; FEDIN, E.I.

Pentaethanodiferrocene. Dokl. AN SSSR 152 no.4:875-878 O '63, (MIRA 16:11)

1. Instutut elementoorganicheskikh soyedineniy AN SSSR.

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AUTHORS: Pavlov, B. N.; Safin, I. A.; Semin, C. K.; Fedin	B. 1. Ottyours
AUTHORS: Paviov, D. a.,	- And Addison
Ya.	ionance j
TITLE: Pulse method for investigating nuclear quadrupole res	4
SOURCE: AN SSSR. Vestnik, no. 11, 1964, 40-43	
SOURCII: AN SSS OF SOURCE AND A	
TOPIC TAGS: nuclear quadrupole resemance, spectrometer	
a a threat tent in	nuclear quadrupole
ARSTRACT: The advintages of pulse methods for investigating researce ROE) over steady-state methods are discussed. Starts researce ROE) over steady-state methods are discussed. Starts research	eady-state mathods
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are required. As a result, steady-state meaning.	
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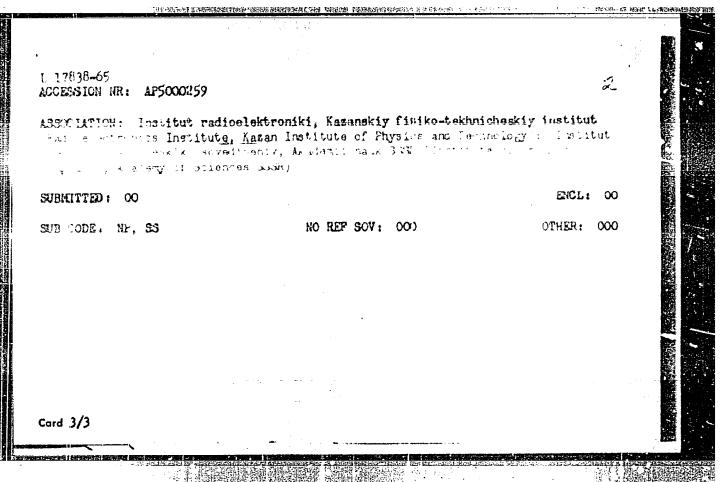
constant with line width, since the initial amplitude of the nuclear induction again. As I the maximum amplitude of the quadrupole spin echo signal are injuriable. The interpret NQR signal intensity and are only slightly dependent on the way in a limitable motion that the gain in sensitivity if the jury matters over the steady-state method is

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 $4\pi \sqrt{\frac{T_1}{T_1^*}} \frac{\Delta v_{BS}}{\Delta v_{ip}} \frac{F_{rSB}}{F_{ip}}$ 

where  $T_1$  is the spin-lattice relaxation time,  $T_2^*$  is the parameter of the NQR line width,  $\Delta v_{\rm SS}$  is the pass band of the steady-state spectrometer amplifier,  $\Delta v_{\rm P}$  is the pass band of the pulse spectrometer receiver, and  $F_{\rm SS}$  and F are the respective receiver noise factors. As an example of the Larchiesensing the quadropole echo signal from the As? nuclei in As2S3 is shown. This signal is unabserved when using the steady-state method. Several examples are also given the steady-state method. Several examples are also given the steady-state and resolution stop the served in the served in the steady-state and resolution stop the served in the served and and it diagram.

Card 2/3



SETKINA, V.N., GINZBURG, A.G., FEDIN, E.I.; KURCHBOV, D.N.

Hydrogen isotope exchange in hexa-substituted benzence. Icki. AN SSSR 158 no.3:671-674 S 164. (MIRA 17:10)

1. Institut elementoorganicheskikh soyedinenty AN SSSR. 2. Chlerkorrespondent AN SSSR (for Kursanov).

PAVLOV, B N.; SAFIN, I.A.; SEMIN, G.K.; FEDIN, E.I.; SHTERN, D.Ya.

Pulse method of nuclear quadrupole resonance study. Vest. AN
SSSR 34 no.11:40-43 N '64. (MIRA 17:12)

1. Kazanskiy fiziko-tekhnicheskiy institut 1 Institut elementoorganicheskikh soyedineniy AN SSSR.

# BRAYYER, L.; PETROVSKIY, P.V.; FEDIN, E.I.

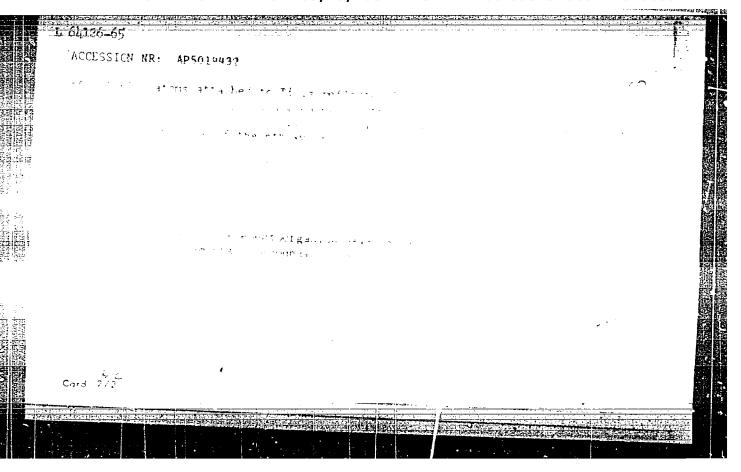
Dimensionality units in high-resolution spin-Hamiltonian nuclear magnetic resonance. Zhur. struk. khim. 6 no.3:456-457 My-Je 165.

Determination of the transfer number in high-resolution nuclear magnetic resonance spectra. Ibid. 2454-456 (MIRA 18:8)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

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26.45 EdP(1)/E-T(m)/E-P(b)/T/E-P(t) - IJP(c) - W/JD UR/0020/65/163/003/0559/0662	57
HOR: Nesmeyanov, A. N. (Academician); redin, E. 1; Ferrovskiy, ovitskiy, V. A.; Nogina, O. V.; Lazareva, N. A. 35	49 3
sovitskly, 7. A. Hogeling of the nuclear magnetic resonance method for studying the rature of the magnetic resonance method for studying the rature of the cyclopentadienyl bending in the cyclopentadienyl legislations of titans.	um
THOS. AN SSSR. Doklady v. 163, no. 3, 1963, 659-662	eri <del>n</del>
TAGG: ferrocene, titanium, cyclopentadiene, nuclear magnetic resonance of The effect of chlorine atoms in compounds of a general formula C5KsT where n = 0, 1, 2, 3) on the nature of the Tileye opentation value of the Tileye open	-3
al shift was *1.10 <sup>-8</sup> . Ability of cyclopentagreny.  (praction with Fe <sup>2+</sup> ) correlates with the proton chemical shift in n	
ord 1/2	·



ANDRIANCY, K.A., (Kademik; FEDIH, E.T.; KOTRELEY, C.V.; GORDERYA, I.V.

Righ-resolution proton magnetic resonance of organocyclosilazanes.

Dokl. AN SSSR 163 no.4:877-879 Ag '65.

(MIRA 18:8)

1. Institut elementeorganicheakikh soyedineniy AN SSSR.

NESMEYANOV, A.N., ukademik; KRITSKAYA, I.I.; FEDIN, E.1.

Synthesis and properties of A-allylcarbonyl complexes of iron.

Dokl. AN SSSR 164 no.5:1058-1061 0 \*65. (MIRA 18:10)

1. Institut elementcorganicheskikh soyedineniy AN SSSR.

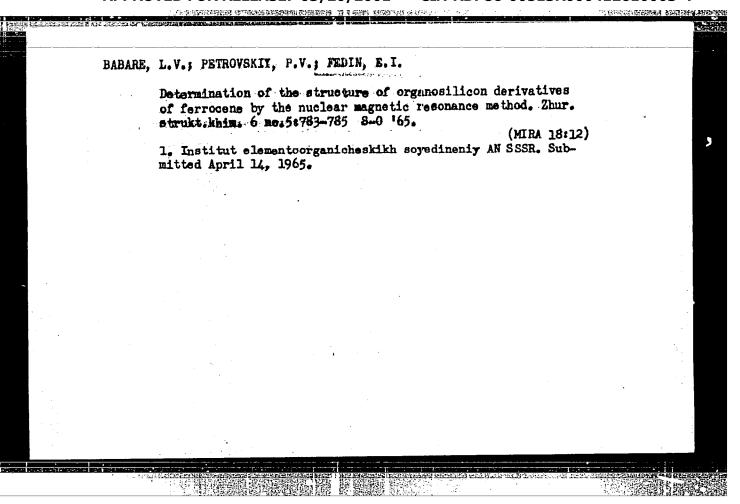
PETROVSKAYA, L.I.; BURLACHENKO, G.S.; FEDIN, E.I.; BAUKOV, Yu.I.;
LUTSENKO, I.F.

Proton magnetic resonance of esters of metalated (Si. Ge. S

Proton magnetic resonance of esters of metalated (Si, Ge, Sn) acetic acid and O-silyl-O-alkylketene acetals. Zhur.strukt.khim. 6 no.5:781-783 S-0 165. (MIRA 18:12)

1. Institut elementoorganicheskikh soyedineniy AN SSSR i Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova. Submitted April 29, 1965.

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000412610003-4"



SEMPREV, I.R.; DOMNER, A.D.; BARSKAYA, A.B.; KHW. MA. L.M.; BRAYYER, I.;
PETROVSKIY, P.V.; FEDRI, E.I.

Program of computing nuclear mage do resonance spectra of high resolution in the case of str & spin-spin interaction. Zhur. strukt. khim. 6 no. 4s625 / JI-Ag '65 (MIRA 1921)

1. Nauchno-issleder of kkiy institut rezhovey promyshlencesti i Institut elementorganicheskikh soyedineniy AN SSSR. Salmitted April 14, 19.

UR/0062/66/000/006/1031/1038 ACC NR. AP7000726 SOURCE CODE: 1 . KNUNYANTS, I. L., CHEBURKOV, Yu. A., BARGAMOVA, M. D., FEDIN, E. I., PETROVSKIY, P. V., Institute of Heteroorganic Compounds, Academy of Sciences USSR (Institut elementoorganicheskikh soyedineniy AN SSSA) "Perfluorodimethylketene, Communication 7. Structure of the Dimer" Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (News of the Academy of Sciences USSR, Chemical Series), No 6, 1966, pp 1031-1038 Abstract: Perfluorodimethylketene, in contrast to other known ketenes, forms a linear dimer under the action of triethylamine. The dimer was also produced by two other methods: 1) the reaction of an equimolar mixture of hexafluoroisobutyryl chloride and ethylamine; 2) by the action of triethylamine or cesium fluo-ride on perfluoromethacrylyl fluoride. In the latter case the reaction mixture was treated with methanol, yielding the methanolysis product of the dimer and also the known methyl ester of hexafluoroisobutyric acid and the methyl ester of alpha-trifluoromethyl-beta, beta-difluoro-beta-methoxypropionic acid. The structure of the dimer of perfluorodimethylketene as the bis-fluoride of perfluoro-(alpha, alpha, gamma-trimethylglutaconic) acid was confirmed by its reactions and infrared spectrum. The reaction mechanism proposed for the dimerization includes isomerization of the ketene to the more stable perfluoromethacrylyl flucride. A new reaction was discovered: linear dimerization of functional derivatives of perfluoromethacrylic and difluoromethylenemalonic acids. Orig. art. 1 figure, 9 formulas and 2 tables. [JPRS: 37,023] has: l figure, 9 formulas and 2 tables. LUTKS: TOPIC TAGS: fluorinated organic commound, isomeriz Cold 1/1 vmb SUBM DATE: 07Dec65 (RIG REF: 

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	R: Andrianov, K.A. (Academician); Fedin, E.I.; khin, B.D.  Institute of Organoelemental Compounds, AN SSSR dinemy AN SSSR)  E: Reaction of 8-hydroxyquinoline tribuloxytitanic CE: AN SSSR. Doklady, v. 166, no. 2, 1966, 349-C TAGS: spectrometer, reaction mechanism, titanic chemical stability  RACT: A nuclear magnetic resonance spectrometer chanism of the reaction between 8-hydroxyquinoline ethyl hydroxysilane. Spectra are given for various first event in the reaction is apparently coordinated for the triethyl hydroxysilane with the formation. Substitution of a single sults in such an unstable molecule that disproports the formation of stable compounds having tetrace that the formation of the formation	Institute of Organoelemental Compounds. AN SSSR (Institut elemental region of B-hydroxyquinoline tribuloxytitanium with triethyl hydroxyquinoline tribuloxytitanium with triethyl hydroxyquinoline tribuloxytitanium with triethyl hydroxyquinoline tribuloxytitanium ompound, silane, experimental stability  RACT: A nuclear magnetic resonance spectrometer was used for studying RACT: A nuclear magnetic resonance spectrometer was used for studying thanism of the reaction between 8-hydroxyquinoline tributoxytitanium and shanism of the reaction is apparently coordination of the oxygen is first event in the reaction is apparently coordination of the oxygen is hydroxyl radical of the triethyl hydroxysilane with a titanium atom is hydroxyl radical of the triethyl hydroxysilane with a titanium atom is hydroxyl radical of the triethyl hydroxysilane with a titanium atom is hydroxyl radical of the triethyl hydroxysilane with a titanium atom is the results in transesterification by the mechanism of bimolecular substitution. Substitution of a single butoxyl group probable sults in such an unstable molecule that disproportionation takes place the formation of stable compounds having tetracovalent and hexacothinate saturated titanium atoms. The experimental procedure is described in art. has: 1 figure and 1 table. [JPRS: 36, 455]  CODE: 07 / SUBM DATE: 21Jul65 / ORIO REF: 002

ACC NR: AP7003534

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AUTHOR: Fedin, E. I.; Gorskaya, N. V.

ORG: Institute of Organoelemental Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

TITLE: Irreversibility of transition of NMR signals through a weak field in some molecular crystals

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pic'ma v redaktsiyu. Prilozheniye, v. 5, no. 1, 1967, 16-17

TOPIC TAGS: nuclear magnetic resonance, naphthalene, anthracene, spin relaxation, spin system, spin lattice relaxation

ABSTRACT: The authors performed an experiment with naphthalene single crystals, similar to the experiment of R. V. Pound (Phys. Rev. v. 81, 156, 1951), wherein the sample was demagnetized in a weak (terrestrial) field. Unlike the earlier results, which shoed reversibility of the transition through a weak field and demonstrated the existence of a spin temperature in LiF crystals, in naphthalene the transition through the weak field turned out to be irreversible for the NMR signal: a time  $t \approx 1$  sec turned out to be sufficient for total disorientation of the nuclear spins in these crystals; subsequent establishment of the equilibrium magnetization and a corresponding growth of the NMR signal occurred, as in the initial magnetization, with a time constant  $\tau \approx 10^3$  sec. Neither variation of the intensity of the rf field

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over a wide range, nor defects in the crystal lattice, have any influence on this effect. The behavior of the NMR signal in anthracene and biphenyl was similar. Control experiments with molecular crystals and polymers whose molecules contain no closed electron delocalization loops or have additional intramolecular degrees of freedom (paradichlorobenzene, hexamethylbenzene, oxyacetate of beryllium, paraffin, polyethylene, etc.) disclosed full reversibility of the transition of the NMR signal through a weak field. This irreversibility is qualitatively treated as an indication that in the tested naphthalene, biphenyl, and anthracene, energy is effectively pumped out from the nuclear-spin system into the lattice when H < H<sub>loc</sub>. A theoretical and experimental study of this effect is being continued. The authors thank A. I. Kitaygorodskiy for continuous interest, A. P. Amiton, B. A. Kvasov, N. O. Okulevich, and N. I. Okhlobystin for help with the measurements, and R. M. Myasnikov and L. A. Fedorov for supplying the samples.

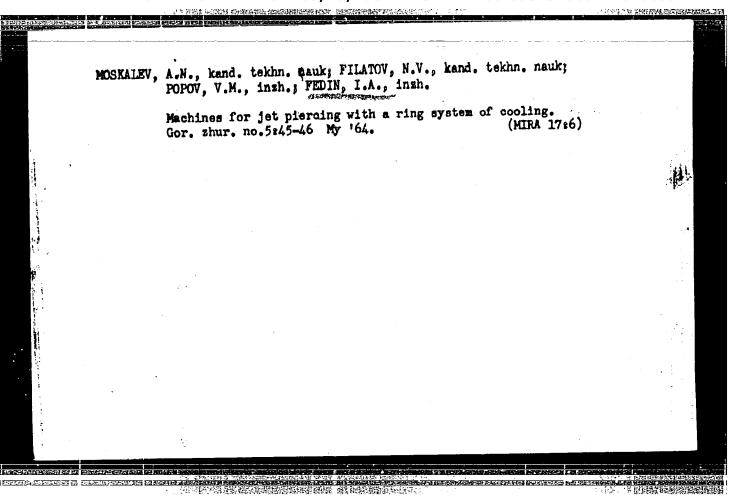
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DAVYDOV, A.S., polkovnik; KORSHUNOV, V.N., polkovnik; KOZLOV,
N.D., podpolkovnik; LUKANIN, Ye.A., polkovnik; MESIN,
A.A., polkovnik; POZMCGOV, A.S., polkovnik; FUTINTEEV,
A.I., podpolkovnik; SIDORENKOV, P.I., polkovnik; STTOV,
L.G., polkovnik; FEDIN, G.R., polkovnik; CHEREDNICHENKO,
V.T., polkovnik; CHERNYSHEY, F.I., kontr-admiral zapasa;
SHATURNYY, A.N., polkovnik; ROMANOV, I.M., red.

[Methodological materials for political instruction] Metodicheskie materialy k politicheskim zaniatiiam. Moskva, Voenizdat, 1965. 240 p. (MIRA-18:7)

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MCGKALEV, A.N., kand. tekhn. nauk; FILATOV, N.V., kand. tekhn. nauk; POPOV, V.M., inzh.; FEDIN, I.A., inzh.; BURLO, Ye.A., inzh.

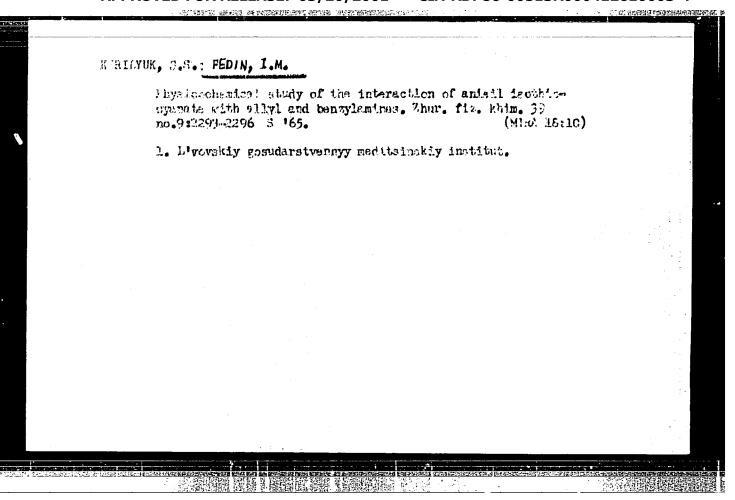
Cast iron cutting without flux. Lit. proizv. no.9:22-23 S '65.

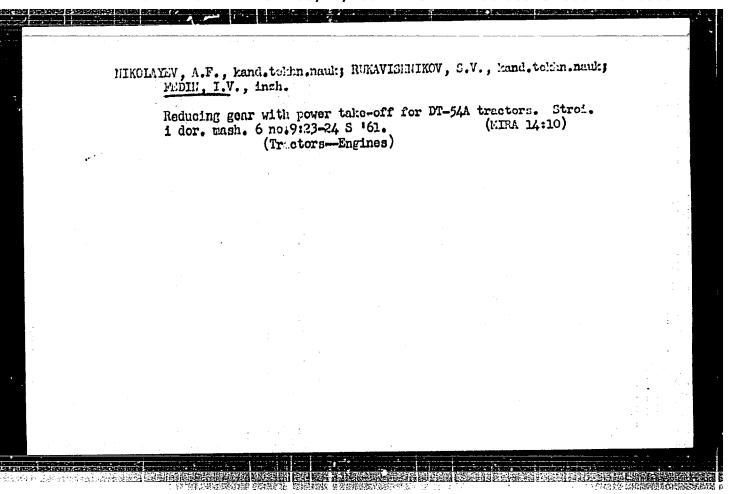
(MIRA 18:10)

MCSKALEV, A.N., kand. tekhn. nauk; FILATOV, N.V., kand. tekhn. nauk; FEDIN, I.A., inzh.; POPOV, V.M., inzh.; BURLO, Ye.A., inzh.

Tests in cutting high-alloyed steels without flux. Svar. proizv. no.9:26-27 S '65. (MIRA 18:9)

1. Dnepropetrovskiy filial im. AN UkrSSR (for Moskalev). 2. Sibirskiy metallurgicheskiy institut (for all except Moskalev).





NIKOLAYEV, A.F., kand.tekhn.nauk; RUKAVINSHNIKOV, S.V., kand.tekhn.nauk;
FEDIN, RW., inzh.

The FTK-GPI-38 cutting trencher. Stroi. i dor. mash. 7 no.7:5-8 Jl
(MIRA 15:7)

(Excavating machinery)